

# EFFECTIVENESS COGNITIVE BEHAVIOR THERAPY OF CHANGES IN BEHAVIOR IN ADULTS WITH CLIENTS ATTENTION DEFICIT HYPERACTIVITY DISORDER: SYSTEMATIC REVIEW

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## ABSTRACT

**Introduction:** Attention Deficit Hyperactivity Disorder (ADHD) is a serious mental disorder that is characterized by three core symptoms: inattention, impulsivity and hyperactivity. Worldwide prevalence of ADHD in children is estimated at 5% of diagnosis through the DSM-IV criteria. In adults interference will be settled in two-thirds of the cases with a prevalence of approximately 2.5 to 4.3%. In Indonesia, the prevalence of ADHD in school age 8-10%, 40-50% and settled ADHD in adolescence and even into adulthood. **Methods:** Keywords with cognitive behavior therapy, non-pharmacology therapy, Attention Deficit Hyperactivity Disorder, ADHD Adult. Search article publication in the database of PubMed, Science Direct, Highware, Google scholar and Sage journal. Study inclusion criteria in adult ADHD patients  $\geq 18$  years of age over the individual therapeutic interventions behaviour-based cognitive therapy, studies that provide behavior change outcomes in adults with ADHD and literature searches restricted to the issue of 2009- 2016 can be accessed full text in pdf format. **Results:** Treatment of individual CBT a significant impact on adult behavior change clients with Attention Deficit Hyperactivity Disorder (ADHD). **Conclusion:** Treatment of individual CBT (cognitive behaviour therapy) had a significant influence on changes in client behavior with ADHD so that can always be applied as part of efforts to improve the quality of life and independence of clients ADHD in adulthood.

**Keywords:** Cognitive Behavior Therapy, a non-pharmacological therapy, Attention Deficit Hyperactivity Disorder, ADHD Adult

## INTRODUCTION

Attention Deficit Hyperactivity Disorder (ADHD) is a serious mental disorder that is characterized by three core symptoms: inattention, impulsivity and hyperactivity (Bachmann et al, 2016). Worldwide prevalence of ADHD in children is estimated at around 5%. In adults interference will be settled in two-thirds of the cases with a prevalence of approximately 2.5 to 4.3% (Asherson, 2016). In Indonesia, the prevalence of ADHD in school age 8-10%, 40-50% of ADHD persist in adolescence and even into adulthood (Selecta, 2013). Attention Deficit Hyperactivity Disorder (ADHD) is a neuro developmental disorder characterized by developmental level is decreased so that clients with ADHD become hyperactive,

impulsive and inattentive behavior. Symptoms usually begin in childhood or adolescence and can persist into adulthood, causing clinically significant disruption (Asherson, 2016). Symptoms, subtypes, and the diagnosis of ADHD is being established according to criteria of DSM-IV lists 18 symptoms such as inattention, hyperactivity / impulsivity and inattentive behavior (Gomes, 2014).

Clinical features of ADHD condition was quite varied in relation to the expression, severity of symptoms, as well as the pathogenesis. It is assumed that these disorders are very dependent on a neurobiological disorder. Individuals with ADHD showed abnormal neuronal activity in nerve, adults with ADHD often suffer from comorbid disorders such as depression

and anxiety. Therefore, multimodal approach can be applied to reduce the symptoms of adult ADHD comorbid client (Bachmann et al, 2016).

Pharmacological treatment is often recommended for clients with ADHD, with the assumption that the drug can improve the function of brain regions are affected. However, side effects, contraindications, or non-response can limit the activity of pharmacological treatment for ADHD clients. It is therefore necessary to develop non-pharmacological interventions that can be applied to client ADHD which can help reduce the signs and symptoms of ADHD clients as well as improve the quality of life and independence of clients in everyday life (Bachmann et al, 2016). A number of studies on the effectiveness of non-pharmacological therapies have been carried out in several countries. Individual therapy CBT (Cognitive Behavior Therapy) is a non-pharmacological therapy that has been developed at this time. Cognitive Behavior Therapy (CBT) is a psychological intervention that involves the interaction between thinking, feeling, and behaving in a person (Somers and Queree, 2007).

## **METHOD**

Synthesis method using a modified PICO performed on adult clients with Attention Deficit Hyperactivity Disorder / ADHD, who received the intervention Cognitive behavioral Therapy / CBT, with the result of behavioral changes in adults with ADHD clients. The keywords used are cognitive behavior therapy, non-farmakological therapy, Attention Deficit Hyperactivity Disorder, ADHD Adult. The article Search publication in the data base of PubMed, Science Direct, Highware, Google shcolar and Sage journal. Study inclusion criteria in adult ADHD patients  $\geq 18$  years of age over the individual therapeutic interventions bahaviour-based cognitive therapy, studies that provide behavior change outcomes in adults with ADHD and literature searches are restricted to the issue of 2009- 2016 can be accessed full text in

pdf format.

## **RESULT**

### **CBT to decrease the level of ADHD symptoms**

The results of Emilson, et al, 2011, there were statistically significant differences in the ratings to decrease the severity of symptoms of ADHD among the intervention group who received CBT / MED with a control group getting TAU / MED. This study uses the RCT design, study was conducted on 54 respondents. 27 respondents in the intervention group was given 15 sessions of CBT therapy for 2 times a week and last for 90 minutes per session, while 27 respondents control group receive treatment as usual. The evaluation was done in before treatment and after treatment with 3 months of follow-up. Results of interviews with K-SADS measurement scale used to measure symptoms of ADHD found the intervention group CBT / MED has lower rating than the control group ( $P < 0.01$ ) even after 3 months of follow-up there was no significant difference in value ( $P < 0.05$ ). As for the interview with CGI measurement scale measuring the severity of ADHD follow-up after 3 months have significant values ( $P < 0.05$ ). On the scale of the lack of concern for the intervention group obtain significant results with  $P < 0.01$ .

The results of the above was also supported by the research of Young, et al, 2015 conducted a study of 95 respondents with adult ADHD who have already been treated with the drug-obtain gain (MED) randomly compared with a control group who received therapy TAU / MED. The intervention group received therapy (CBT / MED) with 15 sessions for 90 minutes each session of intervention R & R2ADHD, has five treatment module, among others; a) neurocognitive eg knowledge strategy to improve attention, memory, impulse control and planning, b) solving problems such as: developing thinking skills, problem identification, conflict management, and make choices c) emotional control, for

example: to manage feelings, anger and anxiety, d) prosocial skills, for example: the recognition of other people's thoughts and juice, empathy, negotiation skills and conflict resolution, e) critical reasoning example: election evaluating behavioral skills. The first step to assess the symptoms of ADHD, and severity of disease. Follow-up is done within 3 months of treatment. The results showed significant gains decreased in ADHD clinical symptoms and severity of disease in them intervention compared to the control group. To scale K-SAD was obtained  $p < 0.001$ ; 95% CI, -7.43 to -3.38. CGI scale with  $p < 0.001$ ; 95% CI, -1.12 to -0.46.

Safren, et al, 2010 in study of 86 respondents with RCT designs. Research in the intervention group was given 12 sessions of CBT therapy and a control group received relaxation therapy intervention and health education. The first step is performed to assess ADHD symptoms with the assessment scale CGI (Clinical Global Impression) assessment performed at baseline, post-treatment and at 6 months and 12 months for follow-up. Furthermore, the second is a self-report assessment of ADHD symptoms. The results showed post-treatment CBT therapy significant clients get better value on the CGI scale score (-0.0531; 95% CI -1.01 to -0.05;  $P = 0.03$ ), and the value scale of ADHD (-4.631; 95% CI, -8.30 to 0.963;  $P = 0.02$ ) compared with the control group.

### **CBT to decrease symptoms of hyperactivity / impulsivity**

According to the results of Emilson, et al, 2011 took a significant decline in the level of symptoms of hyperactivity / compulsive disorder in adults with ADHD clients. Studies using measurement instruments with scale Barkley Current ADHD Symptoms Scale (BCS) obtained good results at the end of treatment in the intervention group ( $F(1,32) = 7.27$ ,  $p < 0.05$ ) and at three months follow-up ( $F(1, 29) = 20.30$ ,  $p < 0.001$ ).

BCS scale is used to assess the symptoms of

ADHD. Assessment is based on DSM-IV diagnostic criteria for ADHD. Each item is rated with a score of 4 points to the frequency of the symptoms experienced during the six months. Scores range between 0 and 27 for each of the two subscales (inattention and hyperactive / impulsive) and 0-54 for the total scale. The results of the research supported by Young, et al, 2015 also showed significant gains in scale BCS with  $p < 0.001$ ; 95% CI: -4.50 to -1.63

Wymbs Research. Brian T, & Brooke SG Molina (2015) with the title "Integrative Couples Group Treatment for Emerging Adults with ADHD Symptoms", the study aims to test the feasibility and acceptance of the CBT program for adults with ADHD with couples therapy to treat symptoms in ADHD in the context romantic relationship with a partner. 15 pairs of participants were given 6 sessions in integrated intervention, given for 11.5 hours each session. The evaluation was done after the session ends, namely in 6 weeks. Then the data is analyzed and the result is a medium effect on symptoms of impulsivity / hyperactivity ( $d = 0.50$ ; 95% CI; 0.29 to 0.70). As for reporting by partner obtained the same results in improvement with treatment. In conclusion participants with adherence to good integrated protocol satisfying results and significantly higher value. Results of the study showed improvement in inattention and hyperactivity / impulsivity after treatment.

### **CBT to the reduction of comorbid ADHD symptoms (anxiety and depression)**

The results of Emilson, et al, 2011 at BAI scale for the anxiety scale scores which significant with  $P < 0.05$  compared with the control group. BDI scale to feelings of depression with a value of  $P < 0.05$ . Scale Beck Anxiety Inventory (BAI) is a scale designed to assess the severity of symptoms of anxiety. While the Beck Depression Inventory (BDI) is a scale used to assess depressive symptoms consisting of 21 points, with the highest value indicates the

severity of depression. Scores were classified as minimal (0-13 BDI, BAI 0-7), mild (14-19 BDI, BAI 8-15), moderate (20-28 BDI, BAI 16-25), or severe (29+ BDI, BAI 26+).

Eddy, Laura D et al, 2015 in Case Series Report study conducted in four college students with ADHD, respondents were given brief therapy CBT 8 sessions, one hour each week in one semester, done pre-treatment and post treatment. The results of a brief study on the four respondents, shows an improvement of the level of anxiety, and depression depression. These results are supported by research from Young, et al, (2015), Bramham et al, (2009), Cherkasova. Mariya V, et al, (2016), which show improvement in symptoms of anxiety and depression respondents.

## CONCLUSION AND RECOMENDATION

Treatment of individual cognitive behavior therapy (CBT), whether done individually or in groups have a significant influence on changes in client behavior of adults with ADHD which include changes in knowledge about ADHD symptoms, a decrease in hyperactivity / compulsive disorder, improved quality of life and independence of the client, as well as reduction of comorbid ADHD symptoms such as anxiety and depression levels. This further proves that non-pharmacologic therapy CBT has a very important role in the management of adult clients with attention deficit hyperactivity disorder because, this CBT therapy can help clients change behavior in everyday life independently so that clients can improve their quality of life.

Intervention CBT therapy given to respondents of the review 12 journals using various sessions, the duration of the time and duration of the implementation of therapy, ranging from 6 to 15 sessions, with a duration varying from 2 times a week, every week, and every month with duration 60 minutes until 1.5 hours each session. Most therapy CBT has been modified by the

researcher. But the results of a review of 12 journal also get that adults with ADHD still need treatment from a doctor to pharmacological therapy, with additional therapy such as CBT non pharmacologic is a significant result of the pharmacological therapy alone.

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